PGAS Language Runtimes (1 of 2)

- Many Open Source implementations of PGAS Languages
  - UPC: Berkeley UPC (LBNL+UCB) or GCC/UPC (Intrepid)
  - CAF 2.0 (Rice)
  - Titanium (UC Berkeley)
  - Chapel (Cray)
- PGAS not an IBM deliverable for Mira
  - Already heard: Alpha Works release possible
  - Our project to provide at least UPC and CAF
- All of the above can use GASNet for communication
- Many (most?) of the above already use pthreads w/i a node
- UPC and CAF will seek to run MPI-hybrid applications.

PGAS Language Runtimes (2 of 2)

- Since pthreads is a common denominator
  - IBM will tune pthread lib to effectively use H/W features (atomics, TM, wake-up, etc.)
- Since GASNet is a common denominator
  - Working on a PAMI port of GASNet (hiring)
- Common concerns, but with multiple instances
  - Lang runtimes all need ways to access H/W features, but we don't know the best way to use them
  - We'll want help to understand how to use all these cores and h/w threads to best implement app-level parallelism